



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

October 30, 1990

The Honorable Paul S. Sarbanes
United States Senate
Washington, D. C. 20510

Dear Senator Sarbanes:

I am responding to your October 15, 1990, letter in which you asked us to address the concerns of your constituent, Mr. P. David Wilson, who expressed his disagreement with a Nuclear Regulatory Commission (NRC) policy which establishes guidelines for the NRC staff in reviewing requests for exemptions for certain low-level radioactive waste (LLW) as being below regulatory concern or BRC.

On July 3, 1990, the Commission issued a Below Regulatory Concern Policy Statement. I have enclosed a copy of this statement together with a companion explanatory booklet for your use in responding to Mr. Wilson. The statement identifies the principles and criteria that will govern Commission decisions to exempt certain radioactive material from the full scope of regulatory controls. Thus, the policy could apply, but would not be limited to potential BRC waste determinations. I would emphasize that the policy is not self-executing and does not, by itself, deregulate any LLW. Any specific exemption decisions would be accomplished through rulemaking or licensing actions during which opportunity for public comment would be provided in those situations where generic exemption provisions have not already been established.

The policy can be considered an outgrowth of the concepts articulated in the Low-Level Radioactive Waste Policy Amendments Act of 1985 (Pub. L. 99-240). That Act (i.e., Section 10) directed the NRC to "...establish standards and procedures...and develop the technical capability for considering and acting upon petitions to exempt specific radioactive waste streams from regulation...due to the presence of radionuclides in such waste streams in sufficiently low concentrations or quantities as to be below regulatory concern." In response to the legislation, NRC developed and published in 1986 a Statement of Policy and Procedures which outlines the criteria for considering such petitions. Our recently issued broad policy statement, which has implications beyond waste disposals (e.g., applicable to decommissioning decisions involving the release of residually-contaminated lands or structures), reflects much of the basic radiation protection approach described in this earlier Commission policy. The Commission, in both actions, has acted in the belief that the nation's best interests are served by policies that establish a consistent

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risk framework within which exemption decisions can be made with assurance that human health and the environment are protected. In this regard, we believe our actions are consistent with those of other Federal agencies; e.g., the Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA), who have formulated or are attempting to formulate similar policies for the hazardous materials they regulate.

It may be helpful to first summarize the typical exposures which we all routinely receive from a variety of sources of radiation. The exposures occur from radiation that is natural in origin as well as from sources which involve man-made uses of radioactive material. In total, as estimated by the National Council on Radiation Protection and Measurements (NCRP Report No. 93), the effective dose equivalent received by an average individual in the United States population is about 360 millirem per year. Of this total, over 83 percent (about 300 millirem per year) is a result of natural sources, including radon and its decay products, while medical exposures such as x-rays, when averaged over the U.S. population, contribute an estimated 15 percent (53 millirem per year). Other man-made sources, including nuclear fallout, contribute the remaining 1 to 2 percent of the total exposure. The remaining 1 to 2 percent also includes the contribution from nuclear power plant effluents. Any low-level radioactive material associated with an exemption decision would not be expected to change this typical exposure 'picture.' In fact, the level of radioactivity for some potential BRC wastes may be such a small fraction of natural background radiation that it may not be readily detectable and, therefore, could not cause measurable increases in radiation levels currently associated with drinking water supplies.

Mr. Wilson's concern regarding the potential health and environmental risks from low-level radiation would seem to be based on a report of recent estimates by the National Research Council's Committee on the Biological Effects of Ionizing Radiation (BEIR) and perhaps also the estimates recently made by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). For the purpose of prudently establishing exposure limits for occupational workers and the public, international and national regulatory bodies, including EPA and NRC, have used the health effects information from various scientific committees, including UNSCEAR and BEIR to estimate risks at low doses and dose rates based on extrapolations from the risk estimates applicable to the Japanese atomic bomb survivors. We have used this most recent information in the formulation of the BRC policy. It should be noted, however, that the recently-issued BEIR V report, entitled "Health Effects of Exposures to Low Levels of Ionizing Radiation," states that the possibility cannot be ruled out that there may be no risks from exposures comparable to external natural background radiation.

In closing, I can assure you that we take our mandate to protect the health and safety of the public very seriously. As a result, we will continue to do our best in carefully and clearly responding to the issues and questions raised by Mr. Wilson and other concerned citizens.

Sincerely,

Thomas J. Madden for

Dennis K. Rathbun, Director
Congressional Affairs
Office of Governmental and
Public Affairs

Enclosures:

1. BRC Policy Statement
2. BRC Explanatory Booklet